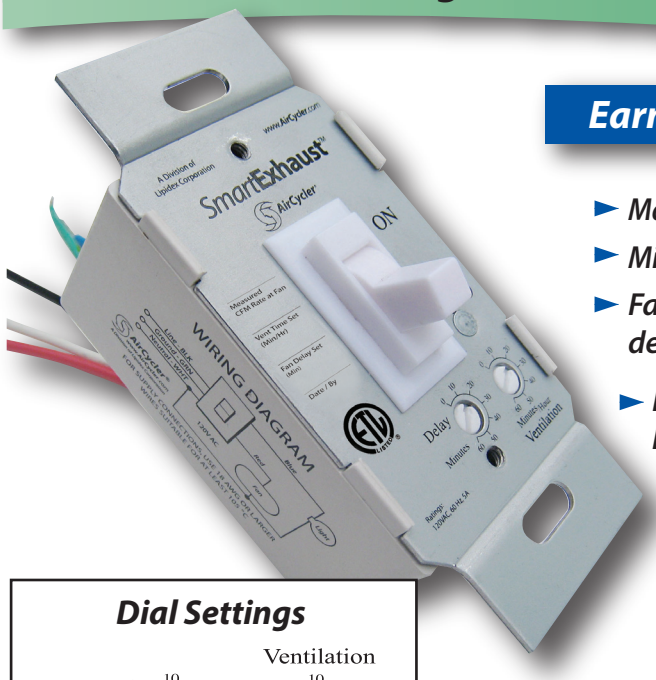
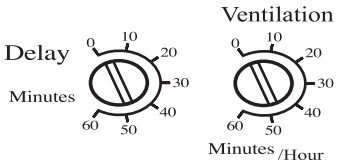
# *Smart*Exhaust™

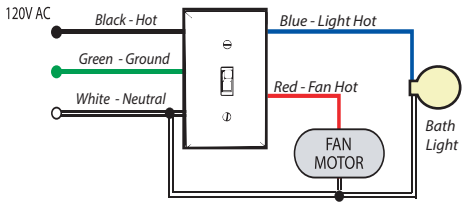
## *Bath Fan/Light Switch/Delay Timer/Ventilation Controller*




### *Dial Settings*




### *Wiring Diagram*




FOR SUPPLY CONNECTIONS, USE 18 AWG OR LARGER WIRES SUITABLE FOR AT LEAST 105 °C

### *Smart*Exhaust™ *Specifications:*

| | |
|---|---|
| Light: | 450 Watts @ 120 VAC (Blue Wire) |
| Fan: | 150 Watts @ 120 VAC (Red Wire) |
| Operation: | 120VAC 60hz ±10% |

2.5" minimum wall box recommended
Cover plate not included. Use any standard switch plate.

*This product may be covered by one or more of the following patents and patents pending: 8,185,244 & 7,258,280*

## *Earn a LEED point for Enhanced Exhaust Ventilation!*

- *Make standard bath fans ASHRAE 62.2 compliant*
- *Microprocessor technology provides precise ventilation times*
- *Fan runs every hour for set ventilation less any set manual and delay operation*
- *Excess manual and/or delay operation is subtracted from the next hours ventilation time*
- *The **Smart**Exhaust™ is great for meeting ventilation codes, reducing mold, mildew and pollutants - It saves you energy and money*
- *Enables the use of energy efficient CFL's in the bathroom*

### *It's Simple, It's Smart, It's Easy...*
### *It's the Most Economical Ventilation Solution!*

The ***Smart*Exhaust™** comes from the same people who brought you the ***AirCycler®*** line of ventilation controllers. The ***Smart*Exhaust™** is a simple, smart, flexible and economical solution to meet exhaust ventilation requirements.

The ***Smart*Exhaust™** is designed to replace the bathroom fan and light switch. By using a microprocessor to monitor and control fan operation, a precise amount of ventilation can be provided.

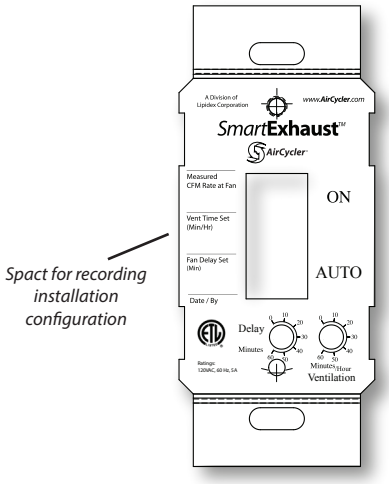
**Turn the Switch on: The light and Fan turn on**
**Turn the switch off: The light turns off, the fan remains running for a set delay time**
**Turn the switch off, on, off: The delay cycle is cancelled for that use**

There are only two settings on the ***Smart*Exhaust™** switch: **VENTILATION** and **DELAY.** You can set the number of minutes per hour that you want the fan to run with the **VENTILATION** setting. You can set the number of minutes that you want the fan to run after the bathroom light has been turned off with the **DELAY** setting. The **DELAY** setting provides additional run time for the fan to complete ventilating the bathroom after use. The ***Smart*Exhaust™** is so smart that if you don't want or need the fan to run after use there is a simple technique to do so. How? Within three seconds of turning the light off, turn it back on then off again within three more seconds. In just a few seconds, the ***Smart*Exhaust™** knows you don't want the fan to continue running.

Since you are substituting an existing switch, or maybe even two, there are no additional labor costs to the ***Smart*Exhaust™** installation. The light and fan are operated by the same switch so the ventilation strategy cannot be defeated.

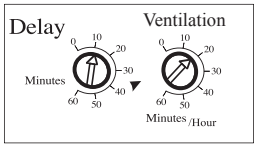
## Installation Instructions:

1) Do not connect this device to aluminum wire. Use with copper or coper clad wire only.
2) TURN POWER OFF at circuit breaker or fuse panel.
3) Remove cover plate and existing switch from wall box if there is one already installed.
4) Connect the wires in the wall box using the supplied wire nuts. There must be 3/4" of bare wire exposed.
5) Twist wires together tightly with supplied wire nuts. Make sure no bare copper is exposed and secure the connections with electrical tape. If light is not being connected, be sure to attach a wire nut to the blue wire and secure with electrical tape.
6) Mount the ***Smart*Exhaust**™ switch into the wall box with supplied mounting screws.
7) Set **DELAY** time by turning the dial to desired minutes.
8) Set **VENTILATION** time by turning the dial to desired minutes per hour. Turn on power at circuit breaker or fuse box.




## Operating Instructions:

- Move the toggle switch up to turn on the fan and the light.
- Move the toggle switch down to turn off the light. The fan will continue to run for set **DELAY** time if it is not manually cancelled.
- To cancel **DELAY** time, turn the switch off and back on again within three seconds. Within another three seconds, turn the switch off and the fan will shut off, cancelling the **DELAY** time for that use.
- **DELAY** will not activate until the light/fan has been on for at least 10 seconds.
- The fan will automatically come on once per hour for the set **VENTILATION** time.




Example: 10 minute delay,
20 minutes per hour ventilation

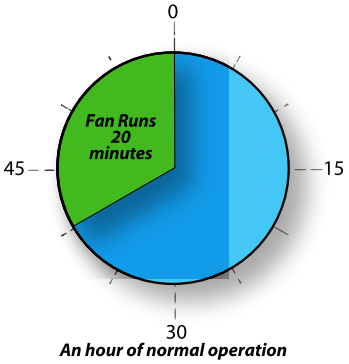
Any manual fan operation and **DELAY** operation will be subtracted from **VENTILATION** time for that hour. If manual fan operation and **DELAY** operation exceed **VENTILATION** time, the excess time will be subtracted from the next hours total **VENTILATION** time.

The ***Smart*Exhaust**™ has a small microprocessor that reads the dials for the two settings. If, for example the **VENTILATION** dial is set to 20 minutes/hour, the microprocessor subtracts 20 minutes from 60 minutes and determines that the ***Smart*Exhaust**™ needs to come on 40 minutes into the hour and run for the remaining 20 minutes of that hour.

For example, if the **DELAY** dial is set to 10 minutes and the light/fan is manually turned on for 4 minutes, the microprosessor will keep track of the 4 minutes of use. When the switch is turned off after the 4 minutes, the microprocessor will keep the fan on for 10 more minutes of the **DELAY** setting. This will add up to 14 total minutes of fan run time for that hour and will be subtracted from the required 20 minutes of **VENTILATION** time. 54 minutes into the hour, the fan will come on and run for the 6 minutes needed to complete the required **VENTILATION**.

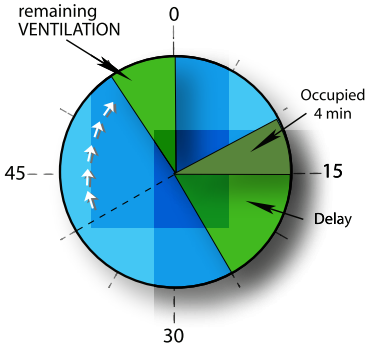
***Example:***

**VENTILATION set for 20 min/hr**
**DELAY set for 10 minutes**




***An hour of normal operation***

**This hour, the bathroom is occupied for 4 minutes:**




**Occupied for 4 min then a set DELAY of 10 minutes. Now we only need 6 more minutes to complete 20 minute set VENTILATION time.**

***What if manual and DELAY time exceeds VENTILATION time?***
The microprocessor will calculate the excess time and subtract it from the total **VENTILATION** time for the next hour.

***What if you don't want the DELAY time to run after you turn off the switch?***
Within three seconds of the light being turned off, turn it back on and then off again within another three seconds. The microprocessor will cancel the **DELAY** time for that use.

***What if you're only in the bathroom for 5 seconds?***
The switch must be turned on for at least 10 full seconds for the microprocessor to start counting time and enable the **DELAY** function. If the switch is turned off within 10 seconds, the fan also

**For purchasing information, contact:**


**AirCycler®**
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**1.877.FAN.CONTROL**
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